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EXAMINER	
THOMPSON, JAMES A	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/772,658	CHIZAWA, NORIYOSHI	
	Examiner	Art Unit	
	James A Thompson	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 December 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27 and 42-67* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 January 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12/6/04, 12/28/04, 1/25/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 25 January 2005 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance of the Japanese Office Actions dated 22 November 2004 and 24 November 2004, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information. It has been placed in the application file, but the information referred to therein has not been considered.

Response to Arguments

2. Applicant's arguments, see page 14, lines 8-12, filed 15 December 2004, with respect to the rejections of claims 5 and 39 under 35 USC §112, 2nd paragraph have been fully considered and are persuasive. The rejections of claims 5 and 39 under 35 USC §112, 2nd paragraph listed in items 2-3 of the previous office action, dated 13 September 2004, have been withdrawn.

3. Applicant's arguments filed 15 December 2004 have been fully considered but they are not persuasive.

The "image sensing unit" and "shading correction circuit" now included in amended claims 1, 15, 42 and 55 is taught in Arimoto (US Patent 5,371,613), which is combined with the primary reference, Orito (US Patent 6,072,912), as discussed below. The new grounds of rejection detailed below are necessitated by the amendments to the claims.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 3, 5, 8, 15, 17, 19, 21, 42-44, 46, 49-50, 54-57, 59, 62-63 and 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orito (US Patent 6,072,912) in view of Arimoto (US patent 5,371,613).

Regarding claims 1 and 15: Orito discloses an image sensing system (figure 1(1) of Orito) constituted by connecting an image sensing apparatus (figure 1(30) of Orito) and image processing apparatus (figure 1(10) of Orito) (column 5, lines 4-7 of Orito). Figure 2 of Orito shows further details of said image processing apparatus (column 4, lines 45-46 of Orito). Figure 5 of Orito shows further details of said image sensing apparatus (column 4, lines 50-52 of Orito).

Said image sensing apparatus comprises a storage medium (figure 5(73) of Orito) adapted to hold data on image sensing characteristic (column 6, lines 29-34 of Orito); and an output unit (figure 5(77) of Orito) adapted to output the data on image sensing characteristic held in said storage medium to said image processing apparatus (column 6, lines 6-14 of Orito).

Said image processing apparatus comprises an input unit (figure 2(24) of Orito) adapted to receive the data on image sensing characteristic output from said image sensing apparatus

(column 6, line 66 to column 7, line 6 of Orito); a generation unit (figure 2(17(portion)) of Orito) adapted to generate image sensing characteristic correction data (column 8, lines 41-45 of Orito) on the basis of the data on image sensing characteristic received by said input unit (column 8, lines 48-53 of Orito); and an image sensing characteristic correction unit (figure 2(17 (portion)) of Orito) adapted to correct an image sensing characteristic of the image data received from said image sensing apparatus (column 8, lines 41-45 of Orito) using the image sensing characteristic correction data generated by said generation unit (column 8, lines 48-53 of Orito). Correcting an image sensing characteristic of image data received from said image sensing apparatus (column 8, lines 41-45 of Orito) inherently requires the generation in some form of said image sensing characteristic correction data in order to perform said correction. The control unit (figure 5(70) of Orito) comprises a CPU (figure 5(71) of Orito), a ROM (figure 5(72) of Orito), and a RAM (figure 5(73) of Orito) (column 6, lines 1-4 of Orito). Said generation unit corresponds to the portion of the CPU, along with the associated program software stored in said ROM and the RAM needed to execute said program software, that is used to perform the functions of said generation unit. Said image sensing characteristic correction unit corresponds to the portion of the CPU, along with the associated program software stored in said ROM and the RAM needed to execute said program software, that is used to perform the functions of said image sensing characteristic correction unit.

Orito does not disclose expressly that said image sensing apparatus comprises an image sensing unit adapted to sense an original and output image data of the original; and a shading

correction unit adapted to apply shading correction to the image data output from said image sensing circuit.

Arimoto discloses an image sensing apparatus (figure 2 of Arimoto) which comprises an image sensing unit (figure 2(201) of Arimoto) adapted to sense an original (column 4, lines 3-5 of Arimoto) and output image data of the original (column 4, lines 56-58 of Arimoto); and a shading correction unit (figure 2(211) of Arimoto) adapted to apply shading correction to the image data output from said image sensing circuit (column 4, lines 64-66 of Arimoto).

Orito and Arimoto are combinable because they are from the same field of endeavor, namely the correction of scanned digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include an image sensing unit and shading correction unit as part of an image sensing apparatus, as specifically taught by Arimoto. The motivation for doing so would have been to provide corrected, standardized image data from the scanner, thus improving image quality (column 1, lines 16-22 of Arimoto). Therefore, it would have been obvious to combine Arimoto with Orito to obtain the invention as specified in claims 1 and 15.

Further regarding claim 15: The apparatus of claim 15 is fully embodied within the system of claim 1.

Regarding claims 3 and 17: Orito does not disclose expressly that said image sensing characteristic includes a characteristic for each of a plurality of colors to be sensed.

Arimoto discloses an image sensing characteristic for each of a plurality of colors (Bd1R,Bd1G,Bd1B) to be sensed (column 20, lines 54-57 and equation 5 of Arimoto).

Orito and Arimoto are combinable because they are from the same field of endeavor, namely the correction of scanned digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use an image sensing characteristic for each color, as taught by Arimoto. The motivation for doing so would have been to correct shading for each individual color (column 21, lines 4-8 of Arimoto). Therefore, it would have been obvious to combine Arimoto with Orito to obtain the invention as specified in claims 3 and 17.

Regarding claim 5: Orito discloses that the data on image sensing characteristic is output from said image sensing apparatus to said image processing apparatus upon starting up said image sensing apparatus (figure 6 and column 7, lines 36-38 of Orito).

Regarding claims 8 and 21: Orito discloses that when the data on image sensing characteristic held in said storage medium is updated (column 7, lines 40-44 and lines 58-60 of Orito), said output unit outputs the updated data on image sensing characteristic to said image processing apparatus (column 8, lines 16-18 of Orito).

Regarding claim 19: Orito discloses that the data on image sensing characteristic is output from said image sensing apparatus to the external image processing apparatus in an initial communication there between (column 7, lines 36-44 of Orito).

Regarding claims 42 and 55: Orito discloses an image scanning system (figure 1(1) of Orito) which comprises an image scanning apparatus (figure 1(30) of Orito), an image processing apparatus (figure 1(10) of Orito), and a connection unit (figure 1(2) of Orito) that connects said image scanning apparatus and

said image processing apparatus to be able to communicate with each other (column 5, lines 4-7 of Orito). Figure 2 of Orito shows further details of said image processing apparatus (column 4, lines 45-46 of Orito). Figures 4-5 of Orito shows further details of said image sensing apparatus (column 4, lines 49-52 of Orito).

Said image scanning apparatus comprises a light source (figure 4(52) of Orito) which can illuminate an original (column 8, lines 24-29 of Orito) and a white plate (figure 4(51) and column 7, lines 44-47 of Orito); an image scanning unit (figure 5(54) of Orito) adapted to scan the original (column 8, lines 28-31 of Orito) and the white plate illuminated by said light source (column 7, lines 47-50 of Orito) and output image data (column 7, lines 47-50 and column 8, lines 28-31 of Orito); and a controller (figure 5(70(portion)) of Orito) adapted to control, at a system startup timing (column 7, lines 36-41 of Orito), to illuminate the white plate by said light source (column 7, lines 45-47 of Orito), scan the illuminated white plate by said image scanning unit (column 7, lines 47-50 of Orito), and transfer information corresponding to image data obtained by scanning the white plate to said image processing apparatus via said connection unit (column 8, lines 16-18 of Orito). The control unit (figure 5(70) of Orito) comprises a CPU (figure 5(71) of Orito), a ROM (figure 5 (72) of Orito), and a RAM (figure 5(73) of Orito) (column 6, lines 1-4 of Orito). Said controller corresponds to the portion of the CPU, along with the associated program software stored in said ROM and the RAM needed to execute said program software, that is used to perform the functions of said controller.

Said image processing apparatus comprises a color correction unit (figure 2(17(portion)) of Orito) adapted to execute a tone correction process (column 8, lines 41-44 of Orito) of an image scanned by said image scanning apparatus (column 8, lines 34-39 of Orito) using the information transferred from said image scanning apparatus (column 8, lines 47-53 of Orito). The control device (figure 2(17) of Orito) comprises a CPU (figure 2 (18) of Orito), ROM (figure 2(19) of Orito), and RAM (figure 2 (20) of Orito) (column 6, lines 59-63 of Orito). Said color correction unit corresponds to the portion of the CPU, along with the associated program software stored in said ROM and the RAM needed to execute said program software, that is used to perform the functions of said color correction unit.

Orito does not disclose expressly that said image scanning apparatus comprises a shading correction unit adapted to apply shading correction to the image data output from said image scanning unit; that said light source illuminates a reference member and that said reference member serves as a color reference; that said image scanning unit scans said reference member; and that said color correction unit executes a color correction process.

Arimoto discloses a shading correction unit (figure 2(211) of Arimoto) adapted to apply shading correction to the image data output from said image scanning unit (column 4, lines 64-66 of Arimoto); that a light source illuminates a reference member (figure 3(301P) and column 8, lines 59-63 of Arimoto), said reference member serving as a color reference (column 6, lines 41-43 of Arimoto); that said reference member is scanned (column 8, lines 60-67 of Arimoto); and executing a color correction

process (column 20, lines 28-32 of Arimoto). Obtaining DV signals with a CCD and writing the read signals DV of the CCD output into a memory (column 8, lines 60-67 of Arimoto) is, by definition, scanning.

Orito and Arimoto are combinable because they are from the same field of endeavor, namely the correction of scanned digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a shading correction unit as part of an image scanning apparatus, as specifically taught by Arimoto. The motivation for doing so would have been to provide corrected, standardized image data from the scanner, thus improving image quality (column 1, lines 16-22 of Arimoto). Further, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to illuminate and scan a reference member that is a color reference and execute a color correction process, as taught by Arimoto. The motivation for doing so would have been that a reference member provides a reliable reference level since it is less likely to stain or discolor (column 6, lines 38-41 of Arimoto) and the color correction process will compensate for the density changes in the standard white plate (column 2, lines 27-29 of Arimoto). Therefore, it would have been obvious to combine Arimoto with Orito to obtain the invention as specified in claims 42 and 55.

Regarding claims 43 and 56: Orito discloses that said controller transfers the correction information (column 8, lines 16-18 of Orito) obtained by scanning said white plate (column 7, lines 47-50 of Orito) to said image processing apparatus via said connector (column 6, line 66 to column 7, line 3 of Orito).

Orito does not disclose expressly that said information is a color correction coefficient corresponding to the image data obtained by scanning the reference member.

Arimoto discloses that said information is a color correction coefficient (column 21, lines 62-64 and equation 9(in columns 21-22) of Arimoto) corresponding to the image data obtained by scanning the reference member (column 21, lines 14-17 of Arimoto).

Orito and Arimoto are combinable because they are from the same field of endeavor, namely the correction of scanned digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to transfer the information, as taught by Orito, said information being the color correction information taught by Arimoto. The motivation for doing so would have been that the color correction information used in the color correction process will compensate for the density changes in the standard white plate (column 2, lines 27-29 of Arimoto). Therefore, it would have been obvious to combine Arimoto with Orito to obtain the invention as specified in claims 43 and 56.

Regarding claims 44 and 57: Orito discloses that the system startup timing corresponds to a power ON timing of said image scanning apparatus and said image processing apparatus (column 7, lines 36-38 of Orito).

Regarding claims 46 and 59: Orito discloses that the system startup timing corresponds to a scan operation start timing of said image scanning apparatus (column 7, lines 36-38 of Orito).

Regarding claims 49 and 62: Orito discloses that said image scanning apparatus further comprises a storage medium

(figure 5(73) of Orito); and said controller stores the value obtained by scanning the white plate (column 7, lines 55-60 of Orito).

Orito does not disclose expressly the image data stored by said controller in said storage medium is stored every time the number of scan times of the document reaches a predetermined value, and is image data obtained by scanning the reference member.

Arimoto discloses storing the image data obtained by scanning the reference member (column 9, lines 1-5 of Arimoto) and storing said image data every time the number of scan times of the document reaches a predetermined value (column 12, lines 28-32 of Arimoto). Since the correction is started every time the number of scan times of the document reaches a predetermined value (column 12, lines 28-32 of Arimoto), then the image data obtained by scanning the reference member (column 9, lines 1-5 of Arimoto) must be stored since storing said image data is a part of the correction process.

Orito and Arimoto are combinable because they are from the same field of endeavor, namely the correction of scanned digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to obtain and store the image data obtained by scanning the reference member when the number of document scans has reached a predetermined value. The motivation for doing so would have been that, after a predetermined number of copies has been made, stains and other imperfections can affect the data quality (column 12, lines 33-35 of Arimoto). Therefore, it would have been obvious to combine Arimoto with Orito to obtain the invention as specified in claims 49 and 62.

Regarding claims 50 and 63: Orito discloses that said image scanning apparatus further comprises a storage medium (figure 5(73) of Orito); and said controller stores the value obtained by scanning the white plate (column 7, lines 55-60 of Orito).

Orito does not disclose expressly the image data stored by said controller in said storage medium is stored at a predetermined time interval, and is image data obtained by illuminating the reference member by said light source and scanning the reference member at said predetermined time interval.

Arimoto discloses storing the image data obtained by illuminating the reference member with a light source (column 8, lines 59-63 of Arimoto) and scanning the reference member (column 9, lines 1-5 of Arimoto) and storing said image data at a predetermined time interval (column 13, lines 14-18 of Arimoto). Since the correction is started every predetermined time interval (column 13, lines 14-18 of Arimoto), then the image data obtained by scanning the reference member (column 9, lines 1-5 of Arimoto) must be stored since storing said image data is a part of the correction process.

Orito and Arimoto are combinable because they are from the same field of endeavor, namely the correction of scanned digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to obtain and store the image data obtained by illuminating and scanning the reference member after a predetermined time interval. The motivation for doing so would have been that dust and other particles may enter the interior of the device and stain the optical system even if the system is idle (column 13, lines 6-11

of Arimoto). Therefore, it would have been obvious to combine Arimoto with Orito to obtain the invention as specified in claims 50 and 63.

Regarding claims 54 and 67: Orito discloses that said image scanning apparatus further comprises a storage medium (figure 5(73) of Orito); and said controller determines the correction data (column 7, lines 55-58 of Orito) in accordance with image data stored in said storage medium (column 7, lines 58-60 of Orito), and transfers the determined correction data to said image processing apparatus (column 8, lines 16-18 of Orito).

Orito does not disclose expressly that said correction data is a color correction coefficient.

Arimoto discloses correction data that is a color correction coefficient (column 20, lines 54-58 and equation 5 of Arimoto).

Orito and Arimoto are combinable because they are from the same field of endeavor, namely the correction of scanned digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to store and transfer the correction data, as taught by Orito, said correction data being the color correction coefficient taught by Arimoto. The motivation for doing so would have been to be able to perform shading correction for each color independently (column 20, lines 24-31 of Arimoto). Therefore, it would have been obvious to combine Arimoto with Orito to obtain the invention as specified in claims 54 and 67.

6. Claims 4, 9-14, 18 and 22-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orito (US Patent 6,072,912) in view of Arimoto (US patent 5,371,613) and Kamisuwa (US Patent 6,728,008 B1).

Regarding claims 4 and 18: Orito does not disclose expressly an image sensor which has a plurality of photoelectric conversion element arrays for respectively photoelectrically converting light of a plurality of colors, and the image sensing characteristic indicates spatial positional deviations of the plurality of colors of pixel signals obtained by said image sensor.

Arimoto discloses an image sensor (figure 21(1001) of Arimoto) which has a plurality of photoelectric conversion element arrays (figure 22(1103-1105) of Arimoto) for respectively photoelectrically converting light of a plurality of colors (column 19, line 68 to column 20, line 7 of Arimoto).

Orito and Arimoto are combinable because they are from the same field of endeavor, namely the correction of scanned digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use an image sensor which converts light into a plurality of colors, as taught by Arimoto. The motivation for doing so would have been to be able to process color images (column 19, lines 61-68 of Arimoto). Therefore, it would have been obvious to combine Arimoto with Orito.

Orito in view of Arimoto does not disclose expressly that the image sensing characteristic indicates spatial positional deviations of the plurality of colors of pixel signals obtained by said image sensor.

Kamisuwa discloses image sensing characteristics (figure 8 (a,b,c,Ia,Ib,Ic) of Kamisuwa) which indicate spatial positional deviations of the plurality of colors of pixel signals obtained by said image sensor (column 8, lines 6-10 of Kamisuwa).

Orito in view of Arimoto is combinable with Kamisuwa because they are from the same field of endeavor, namely the correction of scanned digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to detect spatial positional deviations in the image scanning using image sensing characteristics, as taught by Kamisuwa. The motivation for doing so would have been that spatial positional deviations are errors in scanning (column 7, lines 46-52 of Kamisuwa), so it is naturally desirable that such errors be fixed. Therefore, it would have been obvious to combine Kamisuwa with Orito in view of Arimoto to obtain the invention as specified in claims 4 and 18.

Further regarding claims 9 and 22: Kamisuwa discloses an optical element (figure 2(OP) of Kamisuwa) which brings about a change in spatial positional deviation amount of the plurality of colors of pixel signals obtained by the plurality of photoelectric conversion element arrays of said image sensor (column 6, lines 12-20 of Kamisuwa), and the data on image sensing characteristic includes basic data (a,b,c) which indicates a basic amount of the positional deviation amount (column 8, lines 6-10 of Kamisuwa), and auxiliary data (Ia,Ib,Ic) which indicates a change characteristic of the positional deviation amount (column 8, lines 11-16 of Kamisuwa).

Further regarding claims 10 and 23: Kamisuwa discloses that said optical element is controlled or adjusted in

accordance with a magnification of an image sensed by said image sensor (column 6, lines 7-9 and lines 12-15 of Kamisuwa).

Further regarding claims 11 and 24: Kamisuwa discloses that the data on image sensing characteristic includes data which indicates a relationship between actual positions at which light forms images on the plurality of photoelectric conversion element arrays, and design positions thereof (column 8, lines 6-10 of Kamisuwa).

Further regarding claims 12 and 25: Kamisuwa discloses that said image sensing apparatus further comprises an optical system (figure 2(OP) of Kamisuwa) for forming an original image on an imaging surface of said image sensor (column 4, lines 8-15 of Kamisuwa), and said image sensor senses the original image (column 4, lines 16-21 of Kamisuwa).

Regarding claims 13 and 26: Orito does not disclose expressly that said image sensor has the plurality of photoelectric conversion element arrays which are separated at a predetermined line spacing.

Arimoto disclose that said image sensor has the plurality of photoelectric conversion element arrays which are separated at a predetermined line spacing (figure 22(180μ) and column 20, lines 3-5 of Arimoto).

Orito and Arimoto are combinable because they are from the same field of endeavor, namely the correction of scanned digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use an image sensor in which the plurality of photoelectric conversion element arrays are separated at a predetermined line spacing, as taught by Arimoto. The motivation for doing so would have been to provide an even dot-per-inch reading of a document (column

20, lines 8-11 of Arimoto). Therefore, it would have been obvious to combine Arimoto with Orito to obtain the invention as specified in claims 13 and 26.

Further regarding claims 14 and 27: Kamisuwa discloses that the plurality of colors are three colors including red (R), green (G), and blue (B) (column 9, lines 17-21 of Kamisuwa), and the data on image sensing characteristic includes data indicating spatial deviation amounts among R, G, and B pixel signals (column 8, lines 11-15 of Kamisuwa).

7. Claims 2, 6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orito (US Patent 6,072,912) in view of Arimoto (US patent 5,371,613) and Ohta (US Patent 5,875,260).

Regarding claims 2 and 16: Orito in view of Arimoto does not disclose expressly that the image sensing characteristic is a linearity characteristic.

Ohta discloses an image sensing characteristic (L*a*b* space) that is a linearity characteristic (column 4, lines 4-7 of Ohta).

Orito in view of Arimoto is combinable with Ohta because they are from the same field of endeavor, namely the correction of digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a linearity characteristic, such as the L*a*b* space taught by Ohta, as the image sensing characteristic. The motivation for doing so would have been that L*a*b* space is a standardized color space that has been provided by the CIE (column 4, lines 4-5 of Ohta). Therefore, it would have been obvious to combine Ohta with Orito in view of Arimoto to obtain the invention as specified in claims 2 and 16.

Regarding claim 6: Orito in view of Arimoto does not disclose expressly that said generation unit generates the image sensing characteristic correction data by inversely converting the data on image sensing characteristic.

Ohta discloses generating image sensing characteristic correction data (R',G',B') by inversely converting the data on image sensing characteristic (column 5, lines 60-64 of Ohta).

Orito in view of Arimoto is combinable with Ohta because they are from the same field of endeavor, namely the correction of digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to inversely convert the data on image sensing characteristic, as taught by Ohta. The motivation for doing so would have been to obtain the image signals resulting from the image data correction in the original color space (RGB) (column 5, lines 61-63 of Ohta). Therefore, it would have been obvious to combine Ohta with Orito in view of Arimoto to obtain the invention as specified in claim 6.

8. Claims 7 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orito (US Patent 6,072,912) in view of Arimoto (US patent 5,371,613), Kamisuwa (US Patent 6,728,008 B1), and Sugiura (US Patent 4,679,074).

Regarding claims 7 and 20: Orito in view of Arimoto and Kamisuwa does not disclose expressly that said image sensing apparatus further comprises updating means for, when an exchangeable unit including said image sensor is exchanged, updating the data on image sensing characteristic held in said storage medium in accordance with a characteristic of the unit.

Sugiura discloses updating unit (figure 3(406) of Sugiura) adapted to, when an exchangeable unit including said image sensor is exchanged (column 4, lines 5-6 of Sugiura), update the data on image sensing characteristic held in said storage medium in accordance with a characteristic of the unit (column 4, lines 6-13 of Sugiura).

Orito in view of Arimoto and Kamisuwa is combinable with Sugiura because they are from the same field of endeavor, namely digital image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include the updating unit taught by Sugiura. The motivation for doing so would have been to compensate for the different properties of the different input devices (column 4, lines 10-13 of Sugiura). Therefore, it would have been obvious to combine Sugiura with Orito in view of Arimoto and Kamisuwa to obtain the invention as specified in claims 7 and 20.

9. Claims 47, 51-52, 60 and 64-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orito (US Patent 6,072,912) in view of Arimoto (US patent 5,371,613) and Sugiura (US Patent 4,679,074).

Regarding claims 47 and 60: Orito discloses correction coefficients in accordance with the image data obtained by scanning the white plate (column 5, lines 51-58 of Orito) and transferring said correction coefficients to said image processing apparatus as the information (column 8, lines 16-18 of Orito). Measuring white level data (column 8, lines 48-50 of Orito) and black level data (column 8, lines 62-66 of Orito) is used for tone correction (column 9, lines 12-18 of Orito).

Orito does not disclose expressly that said image scanning apparatus holds a plurality of color correction coefficients which are measured in advance, and said controller selects a corresponding one of the plurality of color correction coefficients in accordance with the value obtained by scanning the reference member; and that said transferred correction coefficients are specifically color correction coefficients.

Arimoto discloses that said correction coefficients are specifically color correction coefficients (column 20, lines 24-28 of Arimoto); and that said color correction coefficients are in accordance with the image data obtained by scanning the reference member (column 21, lines 14-17 and equation 9(in columns 21-22) of Arimoto).

Orito and Arimoto are combinable because they are from the same field of endeavor, namely the correction of scanned digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use color correction coefficients that are in accordance with the image data obtained by scanning the reference member. The motivation for doing so would have been to correct shading for each individual color (column 21, lines 4-8 of Arimoto) and that a reference member provides a reliable reference level since it is less likely to stain or discolor (column 6, lines 38-41 of Arimoto). Therefore, it would have been obvious to combine Arimoto with Orito.

Orito in view of Arimoto does not disclose expressly that said image scanning apparatus holds a plurality of color correction coefficients which are measured in advance, and said controller selects one of a plurality of color correction coefficients.

Sugiura discloses that said image scanning apparatus holds a plurality of color correction coefficients which are measured in advance (figure 2A and column 4, lines 5-8 of Sugiura), and selecting one of a plurality of color correction coefficients (column 4, lines 7-13 of Sugiura). Since the color correction coefficients (figure 2A and column 3, lines 24-26 of Sugiura) are a matrix table that is selected based on the input device selection (column 4, lines 5-8 of Sugiura), then it is inherent that said color correction coefficients are measured in advance since said color correction coefficients are stored in the input correction device (figure 3(405) and column 4, lines 7-8 of Sugiura) before said selection is made (column 4, lines 6-8 of Sugiura).

Orito in view of Arimoto is combinable with Sugiura because they are from the same field of endeavor, namely digital image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to hold a plurality of color coefficients which are measured in advance and select one of said coefficients, as taught by Sugiura, in accordance with the value obtained by scanning the reference member, as taught by Arimoto. The motivation for doing so would have been to compensate for the different properties of the different input devices (column 4, lines 10-13 of Sugiura). Therefore, it would have been obvious to combine Sugiura with Orito in view of Arimoto to obtain the invention as specified in claims 47 and 60.

Regarding claims 51 and 64: Orito discloses a storage medium (figure 5(73) of Orito) adapted to store the image data obtained by scanning the white plate (column 6, lines 29-34 of Orito).

Orito does not disclose expressly that said storage medium stores the image data obtained by scanning the reference member; and an initialization unit adapted tp initialize the image data stored in said storage medium when the light source has been exchanged.

Arimoto discloses storing the image data obtained by scanning the reference member (column 8, lines 60-67 of Arimoto).

Orito and Arimoto are combinable because they are from the same field of endeavor, namely the correction of scanned digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to store the image data obtained by scanning a reference member, as taught by Arimoto, in the storage medium taught by Orito. The motivation for doing so would have been that said reference patch can be used as a standard density measurement (column 6, lines 38-43 of Arimoto. Therefore, it would have been obvious to combine Arimoto with Orito.

Orito in view of Arimoto does not disclose expressly an initialization unit adapted to initialize the image data stored in said storage medium when the light source has been exchanged.

Sugiura discloses an initialization unit (figure 3(405) of Sugiura) adapted to initialize the reference values when the light source has been exchanged (column 4, lines 6-10 of Sugiura).

Orito in view of Arimoto is combinable with Sugiura because they are from the same field of endeavor, namely digital image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to initialize the reference values stored in the storage medium

taught by Orito when the light source is exchanged, as taught by Sugiura. The motivation for doing so would have been to compensate for the different properties of the different input devices (column 4, lines 10-13 of Sugiura). Therefore, it would have been obvious to combine Sugiura with Orito in view of Arimoto to obtain the invention as specified in claims 51 and 64.

Regarding claims 52 and 65: Orito discloses transferring image information to said image processing apparatus (column 8, lines 16-18 of Orito) via said connection unit (column 7, lines 4-6 of Orito).

Orito in view of Arimoto does not disclose expressly that, when said light source has been exchanged, said image scanning apparatus transfers light source exchange information indicating exchange of said light source to said image processing apparatus via said connection unit, and said image processing apparatus further comprises an informing unit for informing that said light source has been exchanged on the basis of the transferred light source exchange information.

Sugiura discloses that, when said light source has been exchanged, said image scanning apparatus transfers light source exchange information (selected correction table) indicating exchange of said light source (column 3, line 68 to column 4, line 2 of Sugiura); and an informing unit (figure 3(404) of Sugiura) for informing that said light source has been exchanged on the basis of the transferred light source exchange information (column 4, lines 5-10 of Sugiura).

Orito in view of Arimoto is combinable with Sugiura because they are from the same field of endeavor, namely digital image data processing. At the time of the invention, it would have

been obvious to a person of ordinary skill in the art to transfer said light source exchange information, as taught by Sugiura, to said image processing apparatus via said connection unit, as taught by Orito, and inform with an informing unit that said light source has been exchanged, as taught by Sugiura. The motivation for doing so would have been to compensate for the different properties of the different input devices (column 4, lines 10-13 of Sugiura). Therefore, it would have been obvious to combine Sugiura with Orito in view of Arimoto to obtain the invention as specified in claims 52 and 65.

10. Claims 45, 48, 53, 58, 61 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orito (US Patent 6,072,912) in view of Arimoto (US patent 5,371,613) and Taguchi (US Patent 5,771,106).

Regarding claims 45 and 58: Orito in view of Arimoto does not disclose expressly that said image scanning apparatus has a state transition function of changing an apparatus state to a standby state in which power supply to at least one unit of said image scanning apparatus is shut off, and restoring from the standby state to a scan ready state of the original, and the system startup timing corresponds to a restoration timing from the standby state to the scan ready state of the original.

Taguchi discloses changing an apparatus state to a standby state in which power supply to at least one unit of said image scanning apparatus is shut off (column 16, lines 49-51 of Taguchi), and restoring from the standby state to a scan ready state of the document (column 16, lines 51-55 of Taguchi), and the system startup timing corresponds to a restoration timing from the standby state to the scan ready state of the original

(column 16, lines 63-67 of Taguchi). Preliminarily lighting up the light source and fetching shading correction data (column 16, lines 63-67 of Taguchi) starts up the system since, afterwards, scanning the original begins (column 16, lines 64-65 of Taguchi).

Orito in view of Arimoto is combinable with Taguchi because they are from the same field of endeavor, namely the correction of scanned digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to put said image scanning apparatus into a stand-by mode when said image scanning apparatus is not in use, restore said image scanning apparatus from said stand-by state when said image scanning apparatus needs to be used, and set the time of restoration as the initial setup time for the system, as taught by Taguchi. The motivation for doing so would have been to suppress light quantity changes caused by temperature characteristics of the light source (column 16, lines 45-48 of Taguchi). Therefore, it would have been obvious to combine Taguchi with Orito in view of Arimoto to obtain the invention as specified in claims 45 and 58.

Regarding claims 48 and 61: Orito in view of Arimoto does not disclose expressly that, when the image data obtained by scanning the reference member falls with a range that exceeds a pre-set threshold value, said image scanning apparatus fixes the color correction coefficient at a given value.

Taguchi discloses specifying maximum values for the reference values of each of the individual colors (column 15, lines 12-18 of Taguchi). Therefore, if a color is scanned in whose value exceeds said pre-set maximum values, said color value will be fixed to said pre-set maximum value.

Orito in view of Arimoto is combinable with Taguchi because they are from the same field of endeavor, namely the correction of scanned digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to set a maximum threshold value to which value obtained by scanning the image data is set if said scanned value exceeds said threshold value, as taught by Taguchi, said scanned value being value obtained from the scanned reference member image data taught by Orito. The motivation for doing so would have been that the range and gradation of the light source used to scan the data has to be set (column 15, lines 21-24 of Taguchi). Therefore, it would have been obvious to combine Taguchi with Orito in view of Arimoto to obtain the invention as specified in claims 48 and 61.

Regarding claims 53 and 66: Orito discloses that said image scanning apparatus further comprises a storage medium (figure 5(73) and column 6, lines 29-34 of Orito).

Orito in view of Arimoto does not disclose expressly that, upon shutting off power supply to at least one unit of said image scanning apparatus, said controller controls to illuminate the reference member by said light source and to scan the illuminated reference member by said image scanning unit before the power supply shutoff, and stores the image data obtained by scanning the reference member in said storage medium.

Taguchi discloses that, if the lamp is in the "cool" or previously off state, the correction data is read straight from the storage medium (RAM) (column 22, lines 9-11 of Taguchi) and then used to set the correction parameters (column 22, lines 11-13 of Taguchi). Therefore, the reference member must be illuminated and scanned before the power supply is shut off and

the image data obtained by scanning the reference member stored in said storage medium. Otherwise, there would be no correction data to read from said storage medium.

Orito in view of Arimoto is combinable with Taguchi because they are from the same field of endeavor, namely the correction of scanned digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to illuminate and scan said reference member, as taught by Orito, and store the thus obtained data before the power is shut off so that said data can be read when the scanner is turned back on, as taught by Taguchi. The motivation for doing so would have been to be able to have correction data to perform shading corrections when the scanner is first turned back on. Therefore, it would have been obvious to combine Taguchi with Orito in view of Arimoto to obtain the invention as specified in claims 53 and 66.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A Thompson whose telephone number is 571-272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James A. Thompson
Examiner
Art Unit 2624

JAT
23 April 2005

THOMAS D LEE
PRIMARY EXAMINER